UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,504	07/31/2001	R. Martin Emanuele	19720-0625 (42896-261843)	3166

7590 06/02/2004

Jeffery B. Arnold
KILPATRICK STOCKTON LLP
SUITE 2800
1100 Peachtree Street
Atlanta, GA 30309-4530

EXAMINER	
SCHNIZER, RICHARD A	

ART UNIT	PAPER NUMBER
1635	

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/919,504	EMANUELE ET AL.	
	Examiner	Art Unit	
	Richard Schnizer, Ph. D	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☑ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 8/27/03
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/12/04 has been entered.

An amendment was received and entered on 4/15/04.

Claims 1-42 remain pending and are under consideration in this Office Action.

Rejections Withdrawn

The rejection of claims 1-38 under 35 USC 112, second paragraph is withdrawn in view of Applicant's amendments.

Claim Objections

Claim 33 is objected to because the phrase "administering to the animal a one or more" is ungrammatical. Deletion of "a" is suggested.

Claim 38 is objected to because the phrase "a gene products" is ungrammatical.

Priority

Applicant has claimed priority under 35 USC 120 to a variety of US patent applications. This priority claim cannot be granted for the following reasons. All instant claims embrace compositions comprising an octablock copolymer and a nucleic acid, however none of the priority documents provides support for this combination of limitations. For this reason, the filing date of the instant claims must be the filing date of the instant application, 7/31/01.

Response to Arguments

Applicants arguments filed 10/5/03 have been fully considered but are unpersuasive.

Applicant appears to argue that the invention is supported by a combination of the prior applications 08/138,271 ('271) and 07/673,289 (289'). The '289 application discloses octablock copolymers as adjuvants in the delivery of therapeutic agents. The '271 application teaches that nucleic acid sequences as instantly claimed are therapeutic agents. If the Examiner understands correctly, Applicant's argument is that the '289 application provides support broadly for the combination of therapeutic agents and octablock copolymers, and because the '271 application extends the definition of therapeutic agents to include nucleic acids as instantly claimed, these documents provide support for the instantly claimed invention. This argument is unpersuasive because neither priority document alone provides support for the combination of octablock copolymers and nucleic acids. Another way to view the issue is whether or not an amendment to the '289 application would have been considered new matter if it recited nucleic acids. Similarly one could ask if an amendment to the '271 application would have been considered new matter if it recited octablock copolymers. In each

situation the answer is yes. The '289 application provides no support for the inclusion of nucleic acids in the genus of therapeutic agents. And, as discussed previously, the '271 application provides no support for octablock copolymers. Applicant has argued that the '271 reference supports octablock copolymers through reference to Schmolka (J. Am. Oil Chemist Soc. 54:110-116(1977). A review of Schmolka shows that this reference teaches how to make poloxamers, meroxapols, poloxamines (i.e. octablock copolymers), and pluradot polyols. See Figs. 1-4. However, Applicant has failed to provide any evidence or logic to indicate that the '271 application relied upon Schmolka for its disclosure of octablock copolymers. A review of the specification of '271 reveals that the invention claimed therein was directed to admixtures of a therapeutic compound (e.g. a nucleic acid) and an effective amount of a block copolymer of the general formula:

$$HO(C_2H_4O)_bC_3H_6O)_a(C_2H_4O)_bH,$$

which is the general formula of a poloxamer. The specification of '271 does not appear to disclose or describe any copolymer other than a poloxamer, except by reference to Schmolka. The Schmolka reference is referred to at page 17, lines 12-18, as providing a description of how to prepare the copolymers represented in Fig. 1 of '271. Fig. 1 discloses 21 copolymers, 17 of which are products of BASF corporation having trade names beginning with a prefix 'L', 'P', or 'F'. BASF corporation uses the prefix 'T' to denote octablock copolymers, so none of these 17 copolymers appears to be an octablock copolymer. The remaining 4 copolymers are CRL 336, CRL 1190, CRL 1235, and CRL 8950. There is nothing in the specification to suggest that any of these compounds is an octablock copolymer, and Applicant has provided no evidence or argument indicating such. In view of the available evidence, one of skill in the art would consider the specification of '271 to be directed to poloxamers of the general formula:

$$HO(C_2H_4O)_bC_3H_6O)_a(C_2H_4O)_bH,$$

and would consider the reference to Schmolka as guidance for to how to make these poloxamers. In the absence of any disclosure of in the specification of '271 of octablock copolymers, one of skill in the art would not refer to Schmolka for guidance as to how to make these compounds.

In summary, Applicant did not disclose the combination of nucleic acids and octablock copolymers until the instantly filed application, and so the priority date of the instant claims must be the filing date of the instant application, i.e. 7/31/01.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 8, 9, 13-17, 19, 23-27, 31-33, 37, 38, and 41 are indefinite because they recite ranges in the following format: "between about X% **to** about Y%." In this phrase, the use of the word "to" renders the claims indefinite such that one cannot know how much polyoxyethylene is required or allowed. It is not possible to be between e.g. "about 10% to about 40%", because "about 10% to about 40%" is not a range defined by endpoints within which one may select a value. Instead, "about 10% to about 40%" defines only one number, so there can be no "between". Substitution of the word "and"

for the word "to" is suggested. Claims 2-7, 10-12, 18, 20-22, 28-30, 34-36, 39-40, and 42 are not included in this rejection because they clearly limit the content of the polyoxyethylene in the compositions.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 8-13, 16-23, 26-31, 33-36, 38, and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Lemieux et al (US Patent 6,359,054, issued 3/19/02).

Lemieux teaches methods of delivering to an animal a composition comprising octablock block copolymers and nucleic acids, (see e.g. claim 13 at column 49). The nucleic acid can be an expression vector, antisense, ribozyme, or oligonucleotide (see column 21, lines 15-29). The octablock copolymers useful in the invention include a variety of conventional and reverse orientation octablock copolymers set forth at column 15, lines 8-29, including Pluronics T1101, T1301, T1501 and T110R1, T130R1, and T150R1. Pluronic T1501 corresponds to the octablock copolymer recited in instant claims 1, 2, and 17-20, and comprises a hydrophobe weight of 7000 Da and hydrophobe percentage of 90. Pluronic T1301 corresponds to the copolymer in instant claims 3, 4, 21, and 22, and comprises a hydrophobe weight of 5500 Da and hydrophobe percentage of 90. Pluronic T1101 corresponds to the copolymer in instant

claims 4 and 22, and comprises a hydrophobe weight of 4400 Da and hydrophobe percentage of 90. Pluronic T150R1 corresponds to the copolymer in instant claims 9, 10, 27, 28, 33, and 34, and comprises a hydrophobe weight of 6700 Da and hydrophobe percentage of 90. Pluronic T130R1 corresponds to the copolymer in instant claims 11, 12, 29, 30, 35, and 36, and comprises a hydrophobe weight of 5700 Da and hydrophobe percentage of 90. Pluronic T110R1 corresponds to the copolymer in instant claims 12, 30, and 36, and comprises a hydrophobe weight of 4800 Da and hydrophobe percentage of 90.

Thus Lemieux anticipates the claims.

Response to Arguments

Applicants arguments filed 4/15/04 have been fully considered but are unpersuasive. Applicant argues that Lemieux cannot be considered prior art because the effective filing date of the instant application is 10/15/93. This is unpersuasive for the reasons set forth above under Priority, i.e. the effective filing date of the instant application is 7/31/01. Applicant argues that column 14, lines 34-36 and 54-64 of Lemieux do not teach anticipatory block copolymers. The Examiner agrees but notes that the actual copolymers relied upon in the rejection, i.e. Pluronics T1101, T1301, T1501 and T110R1, T130R1, and T150R1 were identified by name and correctly cited at column 15 lines 8-29. Applicant states that it is not clear what molecular weight is taught by Lemieux for each polymer, because no standard deviation is given for each average molecular weight given, argues that Lemieux does not teach "a total octablock molecular weight of 5220". In response the PTO notes that the instant claims do not require any precise molecular weight, instead they are drawn to approximate hydrophobe molecular weights, e.g. "about 5220", "about 5750" or "about 6750". The

specification does not define the term "about" in this context, so it has been given its broadest reasonable interpretation. Under this interpretation, the cited molecular weights of Lemieux, e.g. are deemed to meet the limitations of the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 6, 7, 9, 14, 15, 19, 24, 25, 27, 32, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Lemieux et al (US Patent 6,359,054, issued 3/19/02), and further in view of Emanuele (US Patent 5,674,911, issued 10/7/97).

Lemieux teaches methods of delivering to an animal a composition comprising emulsions of non-ionic block copolymers and nucleic acids. See e.g. claim 18. The copolymers are organized as octablocks (see e.g. claim 13 at column 49). The nucleic acid can be an expression vector, antisense, ribozyme, or oligonucleotide (see column 21, lines 15-29). The octablock copolymers useful in the invention include a variety of conventional and reverse orientation octablock copolymers set forth at column 15, lines 8-45 and 25-31, including Pluronics T1101, T1301, T1501 and T110R1, T130R1, and T150R1 (see column 14, lines 34-36 and 54-62). Pluronic T1501 corresponds to the octablock copolymer recited in instant claims 1, 6, 7, 19, 24, and 25. Pluronic T150R1 corresponds to the copolymer in instant claims 27, 32, and 37. Lemieux also teaches

that the compositions may comprises TWEEN as a surfactant. See column 20, lines 43-47.

Lemieux does not teach a composition comprising both 0.1-5% by weight of a surfactant and 0.5-5% by volume of a low molecular weight alcohol.

Emanuele teaches that surfactants such as polyoxyethylenesorbitan (20) monooleate (TWEEN 80), and low molecular weight alcohols such as ethanol may be added to emulsions of non-ionic block copolymer compositions comprising nucleic acids. See column 11, lines 39-58. Further, the ethanol may be in the concentration range of 0.5-5% by volume, and the surfactant may be in a range of approximately 0.1-5% by weight. See e.g. claims 3, 5, and 6.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the surfactants and low molecular weight alcohols of Emanuele to the compositions of Lemieux. One would have been motivated to do so in order to stabilize the emulsions.

Claims 1, 2, 5, 8, 17-20, 23, 26, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pahlson et al (Acta Pathol. Microl. Immunol. Scand. B (1986) 94(3): 117-125), in view of Woodard (Laboratory Animal Science (1989 May) 39(3): 222-225).

Pahlson teaches a method of inducing an immune response in a mouse by administering whole bacteria emulsified in Freund's complete adjuvant. See abstract. Whole bacteria are considered to comprise expression vectors (chromosomes) comprising sequences (promoters) that can alter the function of nucleic acids (coding sequences). Further, whole bacteria would also be considered to comprise ribozymes as part of their ribosomes, as well as antisense oligonucleotides (Okazaki fragments).

Pahlson does not teach an octablock copolymer.

Woodard teaches that the octablock copolymer T1501 is equivalent to Freund's complete adjuvant for the purpose of stimulating antibody production. See abstract.

It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the T1501 octablock copolymer of Woodard for the Freund's complete adjuvant of Pahlson. One would have been motivated to do so because Woodard teaches that T1501 and Freund's complete adjuvant are equivalent in the art of stimulating antibody production. Regarding the obviousness of art-recognized equivalents, MPEP 2144.06 states in part:

> In order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents... Smith v. Hayashi, 209 USPQ 754 (Bd. of Pat. Inter. 1980) (The mere fact that phthalocyanine and selenium function as equivalent photoconductors in the claimed environment was not sufficient to establish that one would have been obvious over the other. However, there was evidence that both phthalocyanine and selenium were known photoconductors in the art of electrophotography. "This, in our view, presents strong evidence of obviousness in substituting one for the other in an electrophotographic environment as a photoconductor." 209 USPQ at 759.).
>
> **An express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious.** In re Fout, 675 F.2d 297, 213 USPQ 532 (CCPA 1982).

Emphasis added. Because T1501 and Freund's complete adjuvant are art-recognized equivalents in stimulating antibody production, it would have been obvious to substitute one for the other, even in the absence of an express suggestion to do so.

Therefore the invention as a whole was *prima facie* obvious.

Claims 3, 4, 9-13, 16, 21, 22, 27-31, 33, 35, 36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pahlson et al (Acta Pathol. Microl. Immunol. Scand. B (1986) 94(3): 117-125) and Woodard (Laboratory Animal Science (1989 May)

39(3): 222-225), as applied to claims 1, 2, 5, 8, 17-20, 23, 26, and 41 above, and further in view of Jansen et al (US Patent 4,902,500, issued 2/20/90).

The teachings of Pahlson and Woodard are summarized above, and can be combined to render obvious compositions comprising an octablock copolymer of instant claims 1, 2, 5, 8, 17-20, 23, and 26, and nucleic acids such as expression constructs, ribozymes, and antisense oligonucleotides.

Pahlson and Woodard do not teach the octablock copolymers of instant claims 3, 4, 9-13, 16, 21, 22, 27-31, 33, 35, 36, and 38.

Jansen teaches the following octablock copolymers:

Pluronic T1301, corresponding to the copolymer in instant claims 3 and 21.

Pluronic T1101 corresponding to the copolymer in instant claims 4 and 22.

Pluronic T150R1 corresponding to the copolymer in instant claims 9, 10, 13, 16, 27, 28, 31, 33, and 38.

Pluronic T130R1 corresponding to the copolymer in instant claims 11, 29, and

Pluronic T110R1 corresponding to the copolymer in instant claims 12, 30, and

It would also have been obvious to substitute the T1301, T1101, T150R1, T130R2, and T110R1 of Jansen for Freund's complete adjuvant in the invention of Pahlson. One would have been motivated to do so because these compounds have very close structural similarities to T1501, which is an art recognized functional equivalent of Freund's complete adjuvant, and would reasonably be expected to have similar performance characteristics.

Therefore the invention as a whole was *prima facie* obvious.

Claims 1-5, 8-13, 16-18, 20-22, 28-30, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kabanov et al (US Patent 5,656,611, issued 8/12/97).

Kabanov teaches compositions comprising polynucleotides and octablock copolymers having molecular weights and relative amounts of POP and POE overlapping those of the instant claims. See abstract and column 7, line 23 to column 8, line 11, especially column 7, lines 40-50). The polynucleotides may be antisense, oligonucleotides, ribozymes, or expression vectors (see column 10, lines 9-28. The copolymers may be of standard or reversed orientation (see column 7, line 64 to column 8, line 3). The compositions of the copolymers, with respect to the amounts and proportions of POE and POP, embrace a wide variety of compounds (see e.g. column 7, lines 48-51 which disclose that POP and POE monomers may be present in each of the four octablock copolymers in amounts of from about 5 to about 400 monomers).

Kabanov does not teach the precise limitations of the claims with respect to the molecular weight of the POP portion of the copolymer, or the relative amounts of POP and POE in the copolymers. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to arrive at the compositions set forth in the claims in the process of optimizing the invention of Kabanov for the disclosed purpose of delivering nucleic acids to cells. Because the Kabanov teaches a range of compositions which overlaps or embraces those of the instant invention, Kabanov teaches the general conditions of the claims. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 105 USPQ 233, 235 (CCPA 1955).

Thus the invention as a whole was *prima facie* obvious.

Claims 17, 39, 40, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Lemieux et al (US Patent 6,359,054, issued 3/19/02).

Lemieux teaches methods of delivering to an animal a composition comprising octablock block copolymers and nucleic acids, (see e.g. claim 13 at column 49). The nucleic acid can be an expression vector, antisense, ribozyme, or oligonucleotide (see column 21, lines 15-29). The octablock copolymers useful in the invention include a variety of conventional and reverse orientation octablock copolymers set forth at column 15, lines 8-29, including Pluronics T1101, T1301, T1501 and T110R1, T130R1, and T150R1, each of which has an average hydrophobe percentage of 90%.

Lemieux does not specifically exemplify an octablock copolymer with a hydrophobe percentage of greater than 90% and less than 95%. However, at column 15, line 60 to column 16, line 29, Lemieux teaches that the hydrophilic/hydrophobic character of the block copolymer can be optimized depending on the properties of the agent to be delivered. Further, at column 13, lines 1-29, Lemieux teaches that the number of POE and POP monomers in each branch of the octablock may range from about 2 to about 800. Thus the molecular weight of the hydrophobic portion is a result effective variable that may be optimized over a range the encompasses that claimed by Applicant. As a result the invention as a whole was prima facie obvious.

Response to Arguments

Applicants arguments filed 4/15/04 have been fully considered but are unpersuasive.

Applicant argues at page 20 of the response that Lemieux and Emanuele are not prior art because they were filed after the claimed priority date of the instant application. This argument is unpersuasive for the reasons set forth above, i.e. the effective filing date of the instant claims is 7/31/01.

Applicant correctly points out at page 20 that the Office cited the wrong patent in referring to the Emanuele reference. That error has been corrected in this Action. Applicant requested withdrawal of finality of the previous action on the grounds that an incorrect citation was relied upon for the rejection. However, this request was made in an application for an RCE, so finality of the previous rejection could not be withdrawn. Note that the instant Office Action is non-final.

With respect to the rejections based on Pahlson and Woodard, Applicant argues at page 21 of the response that the instant claims do not recite whole bacteria or extracts. This is immaterial. The claims are broadly drawn to compositions comprising ribozymes, antisense oligonucleotides, or nucleic acids that encode a gene product. The compositions of Pahlson clearly comprise these components inasmuch as they comprise whole bacteria, because whole bacteria comprise ribozymes as components of their ribosomes, antisense oligonucleotides such as Okazaki fragments, and chromosomes and RNAs encoding gene products. Applicant has provided no evidence or argument to the contrary. Applicant argues at page 23 that the use of whole bacteria as an immune response inducing material is not recited by the instant claims, so Pahlson cannot in combination with other prior art references render the claims

obvious. This is unpersuasive because the rejected claims do not exclude the use of whole bacteria as an immunogen, and because the cited art teaches each and every element of the claimed compositions and methods. Furthermore it was obvious to combine the references for the reasons stated above.

At page 23 of the response Applicant notes that Jansen teaches the inclusion of at least one phospholipid in the disclosed compositions, and Applicant argues the instant invention is not obvious over t6he combination of Jansen with Pahlson and Woodard because the instant claims do note recite any phospholipid. This is unpersuasive because the instant claims do not exclude the presence of any phospholipid, and the cited art teaches each and every limitation of the claims.

Applicant argues at pages 23 and 24 that Kabanov is not a proper prior art reference because the effective filing date of the instant application is 10/15/93. This is unpersuasive for the reasons set forth above e.g. under Priority. The effective filing date of the instant application is 7/31/01. Applicant further argues that the functionality of the copolymers recited in Kabanov cannot be construed as equivalent amongst any one series (e.g. Tetronics), or else the art would not have produced variants within that series. This is unpersuasive because, as Applicant notes, it was established in the prior art that the function of various copolymers varied with their composition. As such, it would have been obvious for one of ordinary skill, given the teachings of Kabanov, to arrive at the instantly claimed compositions by routine optimization. Because the Kabanov teaches a range of compositions which overlaps or embraces those of the instant invention, and the use of those compositions for nucleic acid delivery, Kabanov teaches the general conditions of the claims. "[W]here the general conditions of a claim are

disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 105 USPQ 233, 235 (CCPA 1955).

Applicant further argues at page 24 that Kabanov teaches compositions comprising a covalently modified polynucleotide, an octablock copolymer, and a polycationic homopolymer, copolymer or block copolymer, while the instant claims do not require a such a polycation. This is unpersuasive because the invention of Kabanov does not require such a combination either. See the abstract which states that the invention is a complex between a polynucleotide and a polyether block copolymer. While inclusion of a further polycationic polymer is preferable, it is not required. As a result there is no reason that one of ordinary skill in the art would not have arrived at the instant invention given the teachings of Kabanov. Furthermore, the instant claims do not preclude the use of polycations, and Applicant has presented no evidence that the inclusion of polycations would affect the compositions in such a way that one of ordinary skill would not, through the process of optimization, arrive at compositions comprising the instantly claimed octablock copolymers.

For these reasons the rejections are maintained.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner(s) should be directed to Richard Schnizer, whose telephone number is 571-272-0762. The examiner can normally be reached Monday through Friday between the

hours of 6:20 AM and 3:50 PM. The examiner is off on alternate Fridays, but is sometimes in the office anyway.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, John Leguyader, be reached at 571-272-0760. The official central fax number is 703-872-9306. Inquiries of a general nature or relating to the status of the application should be directed to the Patent Analyst Trina Turner whose telephone number is 571-272-0564.

DAVE T. NGUYEN
PRIMARY EXAMINER

Richard Schnizer, Ph.D.